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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/759,534	01/20/2004	Adolf Weigl	1690.1010	7114

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EXAMINER

BANKHEAD, GENE LOUIS

ART UNIT PAPER NUMBER

3744

DATE MAILED: 06/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/759,534		WEIGL, ADOLF	
	Examiner		Art Unit	
	Gene L. Bankhead		3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15, 17-19, 23-26, 28-31 and 34 is/are rejected.
- 7) ☒ Claim(s) 16, 20-22, 27, 32 and 33 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 1 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received:
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>January 20, 2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

The instant application lacks section headings.

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

The disclosure is objected to because of the following informalities: On Page 1, line 12; "A large proportion of rooms used by people is nowadays air-conditioned" is believed to be --A large proportion of rooms used by people are nowadays air-conditioned--. Appropriate correction is required.

Claim Objections

Claims 4-6, 14, and 28-29 are objected to because of the following informalities:

Claim 4 recites the limitation of an "injection pump". There is insufficient antecedent basis for this limitation in the claim. The injection pump is not mentioned until claim 3, however claim 4 is dependent upon only claims 1 and 2. It appears claim 4 is dependent upon claim 3 and so has been treated.

Claim 5 recites the limitation of "a non-return valve is arranged between the outlet of the injection pump and the nozzle head". Neither the injection pump nor the nozzle head are mentioned until claim 3. Claim 5 is dependent upon only claims 1 and 2. It appears claim 4 is dependent upon claim 3 and so has been treated.

Claim 5 is objected to because reference character 5 is not enclosed within parentheses. Reference characters corresponding to elements recited in the detailed description of the drawings and used in conjunction with the recitation of the same element or group of elements in the claims should be enclosed within parentheses so as to avoid confusion with other numbers or characters which may appear in the claims. See MPEP § 608.01(m).

Reference character 5 does not describe the nozzle head; rather it describes the metal spike. Appropriate correction is required.

Claim 6 is objected to because of the following informalities: The recitation of “prestessing” is presumed to be –prestressing–. Appropriate correction is required.

Claim 14 is objected to because of the following informalities: The recitation of “the control device comprise an electrical circuit” is presumed to be --the control device comprises an electrical circuit--. Appropriate correction required.

Claim 28 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 29 is objected to because of the following informalities:

The recitation of “Accurate pulsed injecting an antibacterial active substance” is presumed to be --Accurate pulsed injecting of an antibacterial substance--.

The recitation of “electomechanical” is presumed to be –electromechanical--.
Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4,8,10,11,12,14,17-19,29 and 30 are rejected under 102(b) as being anticipated by Higo (US 4810659):

Regarding claims 1 and 2 Higo discloses an injection device capable of accurately ejecting a defined quantity of antibacterial substance onto an evaporator of an air conditioning installation. Higo further discloses a control device capable of controlling the ejection times of the injection device in the automated repetition mode (column 3 lines 20-32).

Regarding claims 3 and 4 the injection device, Figure A below, comprises:

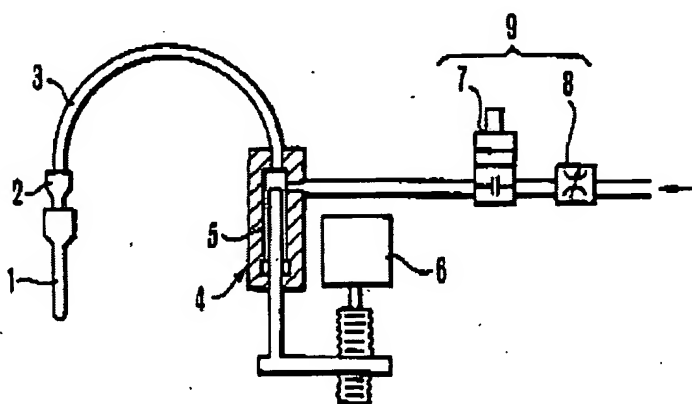


Figure A (Higo)

A reservoir 5 capable of storing an antibacterial substance, an injection pump 4 activated electrically by the control device (column 4 lines 6-23) and at least one nozzle head 2 connected to an outlet of the injection pump via a pipeline 3. The injection pump

has a compressible volume filled with active substance and an actuation mechanism capable of the abrupt compression of the volume (column 1 lines 50- 68 and column 4 lines 7-24).

With regards to claim 8, the nozzle holder 2 joins the nozzle head 1 and the pipeline, (see Figure A).

Regarding claims 10 and 11, the "sequential" control circuit (column 3 lines 29-31) allows for a variable setting of the ejection times (column 3 lines 20-32) and the flow rate adjusting valve 8 allows for the active substance quantity, to be ejected, to be controlled.

In regards to claim 12, the apparatus contains a control device that is capable of being connected to a control unit of the air conditioning installation (column 3 lines 26-31).

Regarding claim 14, Higo teaches a control device that activates the injection pump at predetermined times (column 4 lines 7-24 and column 3 lines 26-32).

With regard to claim 17-19, Higo discloses a metering device 9, with an electromagnet, capable of time-controllable dispensing of an aromatic substance unto the absorbent uptake carrier. Higo further discloses that the control device is capable of controlling the injection device, the antibacterial active substance and the time controlled metering device (column 4 lines 7-24).

In reference to claims 29-31, Higo discloses a process that determines the ejection times of a control device (column 3 lines 46-51) and injects the antibacterial active substance using the electromechanical injection device (column 4 lines 7-24).

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Higo further discloses controlling the ejection times as a function of the operating state with other devices (column 4 lines 27-32).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Higo. Higo discloses all limitations of claim 2 as previously stated. Higo does not expressly disclose however non-return valve arranged between the outlet of the injection pump and the nozzle head. Instead, Higo discloses the non-return valve 8 and the nozzle head situated on opposite sides of the injection pump, see Figure A below.

With regard to claim 6, it is inherent that a pre-stress exists prior to the non-return valve opening and that the valve will not open until this pre-stress is exceeded (column 4 lines 45-54).

In regards to claim 7, the injection device is designed so that an air-free ejection of the active substance at the nozzle head takes place (column 2 lines 35-45).

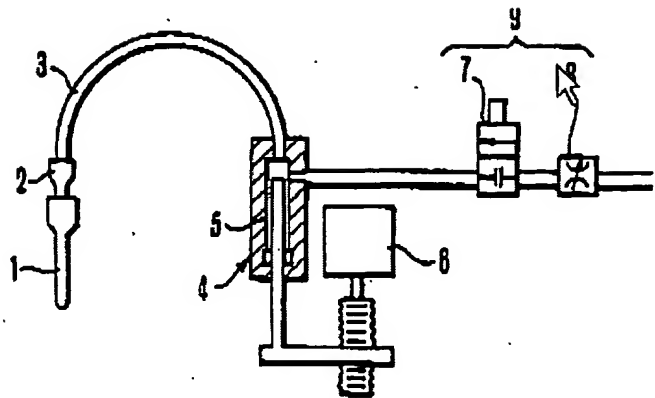


Figure A (Higo)

At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to place a non-return valve between the outlet of the injection pump and the nozzle head. Applicant has not disclosed that placing the non-return valve between the outlet of the injection pump and the nozzle head provides an added advantage, has a particular purpose, or is a solution to a stated problem. One of ordinary skill in the art would have expected the claimed invention to function equally well with the non-return valve between the injection pump and nozzle head or the injection pump between the non-return valve and the nozzle head.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Higo in view of Benalikhoudja (US 6405944). Claim 9 differs from Higo in calling for a nozzle head with a spray cone with an opening angle of between 135 and 170 degrees. Benalikhoudja discloses a spray cone 1; see Figure B below,

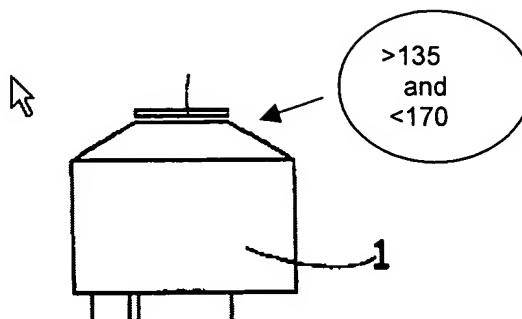


Figure B (Benalikhoudja)

with an opening angle between 135 and 170 degrees (column 3 lines 20-28). The spray cone is a nebulization device suited to produce liquid particles having different viscosities and extremely small dimensions, and to diffuse them in order to form a spray or an aerosol (column 4 lines 4-10). Benalikhoudja teaches the discharge of large particles from nebulization devices leads to unnecessary loss of fluid and can be very costly (column 1 lines 40-45). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the nozzle head of Higo with Benalikhoudja because the nozzles geometric shape enables it to trap large particles, and thus prevent any axial exit of the spray (column 1 lines 45-51 and column 2 lines 25-67 and column 3 lines 1-32).

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Higo in view of Phillips (Us 3952916). Claim 13 differs from Higo in calling for a control device with an electric motor. Phillips discloses an automated dispenser for actuating an aerosol container. Phillips further discloses a DC motor 34 driven by a reduction gear train 35 each connected to an electric circuit 36 (column 4 lines 17-33), and mounted on the reduction gear 35 (column 4 lines 45-56). Phillips teaches it is advantageous to

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couple electric motors with automatic dispensing systems. It would have been obvious to one of ordinary skill in the art to modify the control circuit of Higo in view of Phillips to enable the use of battery powered electrical motors when the dispensing systems is located where no outlet is or location for a line cord is available.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Higo. Higo teaches an injection device used to dispense fluid commonly employed in bioassay systems (column 1 lines 46-5). It is well known in the art bioassay is used to appraise the biological activity of a substance by testing its affect on organisms. Therefore it would have been obvious to one of ordinary skill in the art to use an active substance concentrate in order to test the ability of the concentrate to kill bacterial organisms.

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Higo in view of Garon (US 6216925). Higo further discloses all limitations of claim 1, however does not disclose a control device with a remote operating device. Garon teaches an automatic fluid dispenser, used to dispense antibacterial fluid, with a remote controlled device 50 (column 4 lines 50-55). Garon teaches it is advantageous to control dispensing systems using remote control means. Therefore it would have been obvious to one of ordinary skill in the art to modify the control circuit of Higo with Garon to provide the ability to control the dispensing system when the system is out of physical reach.

Claims 24 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Higo in view of Brickley (US 5902552). Claim 24 differs from Higo in calling for a

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UV lamp. Brickley discloses an ultraviolet air sterilization device 10, with removable UV lamps 20. The lamps are mounted on receptacles 30 and are aligned in an air stream of an air-handling unit duct 11 (column 2 lines 1-35). It is well known in the art ultraviolet light sources are an excellent means for killing bacteria and microorganisms in air streams. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the removable UV lamps of Brickley into the injection device of Higo in order to clean and sterilize the air circulating through commonly used closed spaces for air conditioners, such as offices and hospitals.

Claims 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Higo in view of Elmore (US5558158). Claim 25 differs from Higo in calling for an UV lamp with air guide elements. Elmore discloses UV lamps 73 in a duct 17. Elmore further discloses air guide elements, 67, 59, and 53, that partially inhibit smooth airflow past the UV lamps and partially prolong the dwell time of the air in the region of the lamp, see Figure D below. It is well known in the art ultraviolet radiation is an excellent means of killing bacteria and harmful biological material in airstreams. Therefore it would have been obvious to one of ordinary skill in the art to at the time of the invention to incorporate the ultraviolet lamps of Elmore into the injection device to thoroughly clean and purify air that flows through common air conditioning systems, such as those in schools and laboratories.

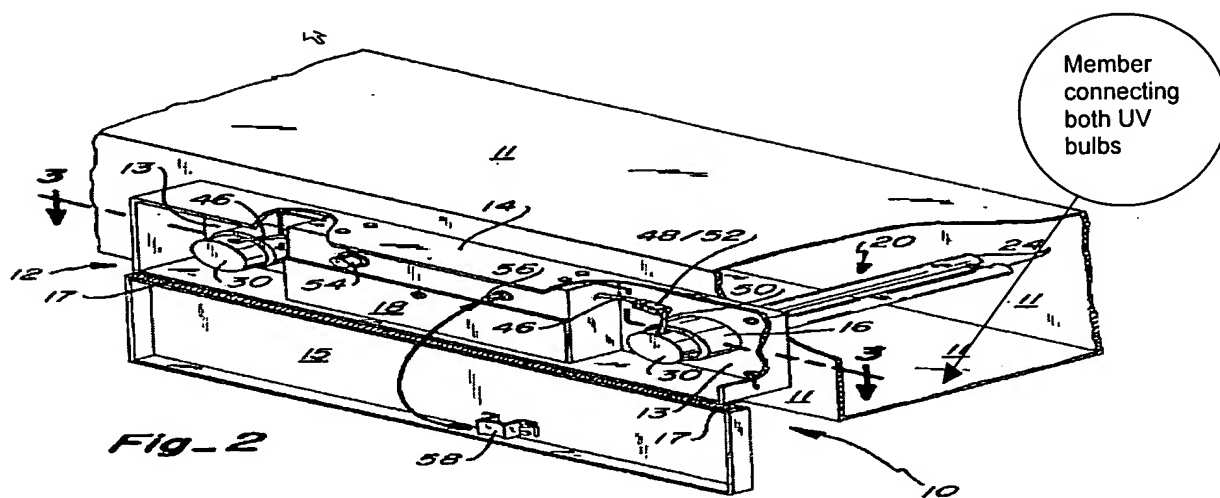


Figure C (Brickley)

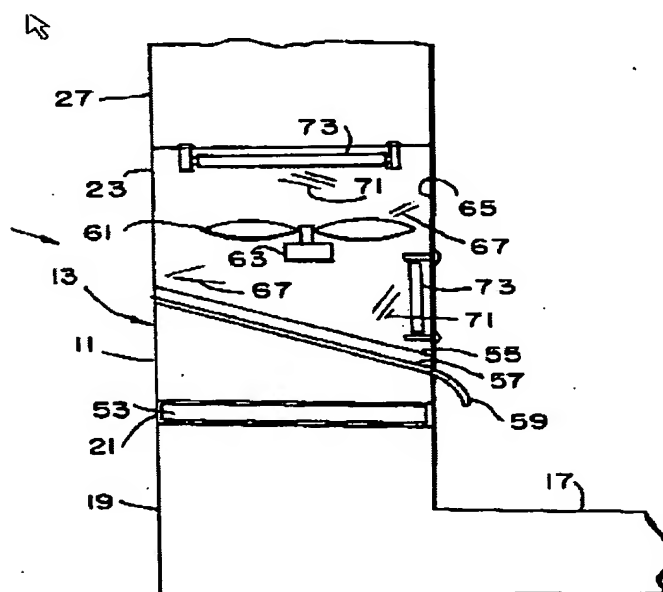


Figure D (Elmore)

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Allowable Subject Matter

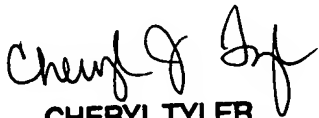
Claims 16, 20-22, 27, 32 and 33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gene L. Bankhead whose telephone number is (571)-272-8963. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on (571)-272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


CHERYL TYLER
SUPERVISORY PATENT EXAMINER

Gene Bankhead
Examiner
Art Unit 3744